

10/777,328

5014

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of processing Chinese kaolin, comprising providing Chinese kaolin wherein at least about 90% by weight of the Chinese kaolin has an equivalent spherical diameter of about 75 microns or less and from about 0.01% to about 90% by weight of the Chinese kaolin has an equivalent spherical diameter of about 2 microns or less, the Chinese kaolin having a higher carbon content, a lower iron oxide content, and a higher propensity to release alumina upon heating compared to Middle Georgia (U.S.A.) kaolin;

delaminating the Chinese kaolin to provide at least about 60% by weight of Chinese kaolin having an average particle diameter of about 2 microns or less; exposing the carbon on a surface of the delaminated Chinese kaolin by pulverizing the delaminated Chinese kaolin at least two times before heating at a temperature from about 450 to about 1200°C; and

consuming the carbon on the surface of the at least twice pulverized Chinese kaolin by heating the at least twice pulverized Chinese kaolin at a temperature from about 450 to about 1200°C for a time from about 1 minute to about 10 hours.

2. (Previously Presented) The method of claim 1, wherein the delaminated Chinese kaolin is pulverized at least five times before heating at a temperature from about 450 to about 1200°C.

3. (Previously Presented) The method of claim 1, wherein the delaminated Chinese kaolin is pulverized at least seven times before heating at a temperature from about 450 to about 1200°C.

10/777,328

5014

-
4. (Previously Presented) The method of claim 1, wherein delaminating the Chinese kaolin comprises forming a slurry comprising Chinese kaolin, grinding media, dispersants, and water and wet milling the slurry.
5. (Previously Presented) The method of claim 1, wherein after pulverization and before heating at a temperature from about 450 to about 1200°C, at least about 80% by weight of the Chinese kaolin has an equivalent spherical diameter of about 2 microns or less.
6. (Previously Presented) The method of claim 1, further comprising pulverizing the Chinese kaolin after being heated at a temperature from about 450 to about 1200°C.
7. (Previously presented) The method of claim 1, wherein providing Chinese kaolin having wherein at least about 90% by weight of the Chinese kaolin has an equivalent spherical diameter of about 60 microns or less and from about 0.1% to about 50% by weight of the Chinese kaolin has an equivalent spherical diameter of about 2 microns or less comprises.
8. (Currently amended) The method of claim 1, further comprising reducing a moisture level of drying the delaminated Chinese kaolin before pulverizing the delaminated Chinese kaolin.
9. (Currently amended) The method of claim 8, wherein reducing a moisture level of drying the delaminated Chinese kaolin comprises spray drying the delaminated Chinese kaolin.
10. (Currently amended) A method of processing Chinese kaolin, comprising providing Chinese kaolin wherein at least about 90% by weight of the Chinese kaolin has an equivalent spherical diameter of about 75 microns or less and from about 0.01% to about 90% by weight of the Chinese kaolin has an

10/777,328

5014

equivalent spherical diameter of about 2 microns or less, the Chinese kaolin having a higher carbon content and a higher propensity to release alumina upon heating compared to Middle Georgia (U.S.A.) kaolin;

delaminating the Chinese kaolin to provide the Chinese kaolin with a first bulk density;

exposing the carbon on a surface of the delaminated Chinese kaolin by pulverizing the delaminated Chinese kaolin at least two times before heating at a temperature from about 450 to about 1200°C, wherein exposing to provide provides the Chinese kaolin with a second bulk density, the second bulk density at least about 25% less than the first bulk density; and

consuming the carbon on the surface of the at least twice pulverized Chinese kaolin by heating the at least twice pulverized Chinese kaolin to form at least one of metakaolin, partially calcined kaolin, and calcined kaolin.

11. (Previously presented) The method of claim 1, wherein at least about 90% by weight of the at least twice pulverized Chinese kaolin has an equivalent spherical diameter of about 2 microns or less and at least about 60% by weight of the at least twice pulverized Chinese kaolin has an equivalent spherical diameter of about 1 micron or less.

12. (Previously Presented) The method of claim 1, wherein the delaminated Chinese kaolin is pulverized at least three times before heating at a temperature from about 450 to about 1200°C.

13. (Previously Presented) The method of claim 1, wherein the delaminated Chinese kaolin is pulverized at least nine times before heating at a temperature from about 450 to about 1200°C.

14.-19. (Canceled)

10/777,328

5014

20. (Currently amended) Chinese kaolin processed according to the method of claim 1, wherein the Chinese kaolin has a higher carbon content, a lower iron oxide content, and a higher propensity to release alumina upon heating compared to Middle Georgia (U.S.A.) kaolin and the kaolin is processed to have an oil absorption of about 60 or more measured in accordance with ASTM D-1483-84.

21. (Currently amended) The Chinese kaolin according to claim 20, the Chinese kaolin having a higher carbon content, a lower iron oxide content, and a higher propensity to release alumina upon heating compared to Middle Georgia (U.S.A.) kaolin and processed to have an oil absorption of about 85 or more measured in accordance with ASTM D-1483-84.

22. (Currently amended) The Chinese kaolin according to claim 20, the Chinese kaolin having a higher carbon content, a lower iron oxide content, and a higher propensity to release alumina upon heating compared to Middle Georgia (U.S.A.) kaolin and processed to have a brightness of about 82 or more measured in accordance with TAPPI method T646 om-94.

23. (Currently amended) A method of processing Chinese kaolin, comprising providing Chinese kaolin wherein at least about 90% by weight of the Chinese kaolin has an equivalent spherical diameter of about 75 microns or less and from about 0.01% to about 90% by weight of the Chinese kaolin has an equivalent spherical diameter of about 2 microns or less, the Chinese kaolin having a higher carbon content and a higher propensity to release alumina upon heating compared to Middle Georgia (U.S.A.) kaolin;

delaminating the Chinese kaolin to provide at least about 60% by weight of kaolin having an average particle diameter of about 2 microns or less;

exposing the carbon on a surface of the delaminated Chinese kaolin by pulverizing the delaminated Chinese kaolin at least two times before heating at a temperature from about 450 to about 1200°C; and

10/777,328

5014

consuming the carbon on the surface of the at least twice pulverized Chinese kaolin by heating the at least twice pulverized kaolin at a temperature from about 450 to about 1200°C. for a time from about 1 minute to about 10 hours.

24. (Previously Presented) The method of claim 23, wherein the delaminated Chinese kaolin is pulverized at least five times before heating at a temperature from about 450 to about 1200°C.

25. (Previously Presented) The method of claim 23, wherein the delaminated Chinese kaolin is pulverized at least seven times before heating at a temperature from about 450 to about 1200°C.

26. (Previously presented) The method of claim 23, wherein delaminating the Chinese kaolin comprises forming a slurry comprising Chinese kaolin, grinding media, dispersants, and water and wet milling the slurry.

27. (Previously presented) The method of claim 23, wherein after pulverization and before heating, at least about 80% by weight of the Chinese kaolin has an equivalent spherical diameter of about 2 microns or less.

28. (Previously Presented) The method of claim 23, further comprising pulverizing the Chinese kaolin after being heated at a temperature from about 450 to about 1200°C.

29. (new) The method of claim 1, wherein the carbon in the Chinese kaolin is exposed on the surface of the delaminated Chinese kaolin by pulverizing the delaminated Chinese kaolin at least three times before heating at a temperature from about 450 to about 1200°C, and the heated Chinese kaolin has scattering of 0.225 or more.

10/777,328

5014

30. (new) The method of claim 10, wherein the delaminated Chinese kaolin is pulverized at least three times before heating at a temperature from about 450 to about 1200°C, and the heated Chinese kaolin has scattering of 0.225 or more.

31. (new) The Chinese kaolin of claim 20, wherein the kaolin has scattering of 0.225 or more.

32. (new) The Chinese kaolin of claim 21, wherein the kaolin has scattering of 0.225 or more.